



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,868	12/29/2000	Peter J. Radusewicz	11SW-4908	1946

7590 05/24/2002
John S. Beulick
Armstrong Teasdale LLP
Suite 2600
One Metropolitan Square
St. Louis, MO 63102

EXAMINER

POLK, SHARON A

ART UNIT	PAPER NUMBER
----------	--------------

2836

DATE MAILED: 05/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,868

Applicant(s)

RADUSEWICZ, PETER J.

Examiner

Sharon Polk

Art Unit

2836 *RC*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on December 29, 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed on January 22, 2002 has been considered by the examiner (see attached PTO-1449).

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the transformer, the voltage sense signal conditioning circuit, the solenoid driver circuit, the LED, the A/D converter, the low pass filters the relays (of the solenoid driver circuit), the solid state devices, the exerciser clock, the generator control board, the three phase sense board, the load shed I/O board, the generator cool down timer, the generator warmup timer, et al. in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432).

Schnackenberg et al. teach:

an automatic transfer switch controller (15) comprising:
a power supply circuit to regulate and filter input power (60);
a voltage sense signal conditioning circuit (75);
a solenoid driver circuit (fig. 7) to drive automatic transfer switch solenoids;
an embedded microcontroller (55) configured to control logic functions and to monitor utility and generator voltages and frequencies;
a user interface (50) to said microcontroller for operator entry of instructions; and
at least one LED (45) indicator interfaced to said microcontroller to indicate operator entry of instructions at said user interface.

Schnackenberg et al. lack the teaching of:

at least one transformer to convert utility and generator power sources into power supply voltages and voltage sensing sources;

However, official notice is taken that it is well known in the art to use transformers because by design, they raise or lower the voltage of alternating current of the original source (convert) for the purpose of providing an output voltage signal which can be utilized by an associated element without causing damage to the element. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a transformer for the purpose of lowering the AC voltage of the source. wherein said solenoid driver circuit is configured with relays for powering automatic transfer switch drive solenoids (col. 8, lines 19-24).

Regarding claims 4 and 5, Schnackenberg et al. teach a solenoid driver circuit is configured with solid state devices for powering automatic transfer switch drive solenoids at col. 8, lines 19-24.

Regarding claim 11, Schnackenberg et al. teach a three phase sense board configured to expand single phase sensing capabilities of said controller to three phase sensing on utility and generator sources at col. 4, lines 51-65.

Regarding claim 12, Schnackenberg et al. teach a load shed I/O option board configured to disconnect loads before said controller transfers loads to a generator power source, preventing generator over load in the abstract.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432) in view of Gagnon (US 6,288,640).

Schnackenberg et al. teach the claimed invention except for:

wherein said microcontroller comprises at least one analog-to-digital converter;
wherein said voltage sense signal conditioning circuit comprises low pass filters configured to remove noise from the power supply thereby enabling said microcontroller analog-to-digital converter to correctly sense voltage and frequency.

Gagnon teaches:

wherein said microcontroller comprises at least one analog-to-digital converter (col. 4, lines 53-54) for the purpose of converting the filtered signal from the low pass filter into an 8 bit digital signal.

wherein said voltage sense signal conditioning circuit comprises low pass filters (22) configured to remove noise from the power supply thereby enabling said

Art Unit: 2836

microcontroller analog-to-digital converter to correctly sense voltage and frequency (col. 5, lines 56-58) for the purpose of avoiding false alarms caused by drift.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schnackenberg et al. with the teachings of Gannon because digital signals while containing the same information as analog, provide a stable output which is easier to distinguish from noise, thereby avoiding false alarms caused by drift (col. 5, lines 56-58).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432) in view of Iverson et al. (US 4,423,336).

Schnackenberg et al. teach the claimed invention except for:

wherein said microcontroller is configured to recognize jumper selections for an exerciser clock adjustable for settings for a preselected number of days.

Iverson et al. teach:

wherein said microcontroller is configured to recognize jumper selections for an exerciser clock adjustable for settings for a preselected number of days (col. 6, lines 44-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schnackenberg et al. with the teachings of Iverson et al. for the purpose of setting day, time, and duration of the generator set exercise.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432) in view of Kita et al. (US 6,335,871).

Schnackenberg et al. teach the claimed invention except for:

wherein said microcontroller is configured to recognize jumper selections for supply voltages for at least one of 120 VAC, 208 VAC, 220 VAC and 240 VAC.

wherein said transformer is configured for supply voltages of at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC, said microcontroller is configured to recognize jumper selections for vsupply voltages for at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC.

Kita et al. teach:

wherein said microcontroller is configured to recognize jumper selections for supply voltages for at least one of 120 VAC, 208 VAC, 220 VAC and 240 VAC (col. 1, lines 11-21).

wherein said transformer is configured for supply voltages of at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC, said microcontroller is configured to recognize jumper selections for vsupply voltages for at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC (col. 1, lines 11-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schnackenberg et al. with the teachings of Kita et al. for the purpose of providing a motor operation controller which can accommodate different power supply voltages . . . (col. 7, lines 37-39).

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432) in view of Reason et al. (US 6,196,012), and further in view of Schilling (US 4,226,581).

Schnackenberg et al. teach the claimed invention except for:

a generator control board configured to interface with said microcontroller and to sense at least one of oil pressure and temperature.

wherein said generator control board is configured with a set of dry contact outputs for starter motor control including at least one of a fuel/run contact output and a start contact output.

Reason et al. teach:

a generator control board configured to interface with said microcontroller and to sense at least one of oil pressure and temperature (col. 3, lines 54-col. 4, line 1).

Schilling teaches that dry contacts, are contacts which open and close but do not make or break the circuit (col. 2, lines 8-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schnackenberg et al. as modified by Reason et al. and Schilling for the purposes of avoiding overpowering . . . the generator and the engine (i.e. just to maintain the generator and the engine unit running), and . . . to avoid shut down (and potentially, damage) (Reason, col. 1, lines 60-63), and for providing general purpose switching, by using dry contacts, which are more reliable for turning devices on or off.

Claim 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schnackenberg et al. (US 6,172,432) in view of Bogel (US 4,384,213).

Schnackenberg et al. teach the claimed invention except for:

wherein said microcontroller is configured with at least one of a generator cool down timer, a generator warmup timer, a loss of power delay timer, a generator fail-to-

start timer, a generator crank timer, a generator pause timer, a generator overload timer and an utility stabilization before switchback timer.

wherein said microcontroller is configured to recognize jumper selections for frequencies of 50 Hz and 60 Hz.

Bogel teaches:

wherein said microcontroller is configured with at least one of a generator cool down timer, a generator warmup timer, a loss of power delay timer, a generator fail-to-start timer, a generator crank timer, a generator pause timer, a generator overload timer and an utility stabilization before switchback timer (col. 12, lines 16-30).

wherein said microcontroller is configured to recognize jumper selections for frequencies of 50 Hz and 60 Hz (col. 5, lines 39-41) for the purpose of ensuring that the frequency has reached a proper operating range (col. 6, lines 10-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schnackenberg et al. with the teachings of Bogel for the purposes of ensuring that when a failed source returns to normal, the voltage is stabilized before a retransfer will occur (col. 12, lines 18-20), ensuring that momentary dips in voltage will not cause a transfer operation (col. 12, lines 23-25), and ensuring that the frequency has reached a proper operating range (col. 6, lines 10-11).

Claims 15, 18, 19, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. (US 6,181,028) in view of Schnackenberg et al.

Kern et al. disclose:

An automatic transfer switch system (10) comprising:

an input configured to be connected to a utility power source (42);
an input configured to be connected to a generator power source (44);
a transfer switch configured to switch a load from said utility power source to said generator power source and further configured to switch the load back to said utility power source;

Kern et al. lack the detailed teaching of the elements of the automatic transfer switch.

Schnackenberg et al. teach the detailed teaching of the elements of the automatic transfer switch.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. with the teachings of Schnackenberg et al. for the purpose of enabling a stand-alone generator to supply electrical power to a plurality of electrical circuits of a structure, such as a residential structure in the event of a failure of electrical power being supplied to the structure by an electrical utility.

Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. as modified by Schnackenberg et al. as applied to claim 15 above, and further in view of Gagnon.

Kern et al. as modified by Schnackenberg et al. teach the claimed invention except for what is taught by Gagnon.

Gagnon teaches:

wherein said microcontroller comprises at least one analog-to-digital converter (col. 4, lines 53-54) for the purpose of converting the filtered signal from the low pass filter into an 8 bit digital signal.

wherein said voltage sense signal conditioning circuit comprises low pass filters (22) configured to remove noise from the power supply thereby enabling said microcontroller analog-to-digital converter to correctly sense voltage and frequency (col. 5, lines 56-58) for the purpose of avoiding false alarms caused by drift.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. as modified by Schnackenberg et al. with the teachings of Gannon because digital signals while containing the same information as analog, provide a stable output which is easier to distinguish from noise, thereby avoiding false alarms caused by drift (col. 5, lines 56-58).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. as modified by Schnackenberg et al. as applied to claim 15 above, and further in view of Iverson.

Kern et al. as modified by Schnackenberg et al. teach the claimed invention except for what is taught by Iverson et al.

Iverson et al. teach:

wherein said microcontroller is configured to recognize jumper selections for an exerciser clock adjustable for settings for a preselected number of days (col. 6, lines 44-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. as modified by Schnackenberg et al. with the teachings of Iverson et al. for the purpose of setting day, time, and duration of the generator set exercise.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. as modified by Schnackenberg et al. as applied to claim 15 above, and further in view of Kita et al.

Kern et al. as modified by Schnackenberg et al. teach the claimed invention except for what is taught by Kita et al.

Kita et al. teach:

wherein said microcontroller is configured to recognize jumper selections for supply voltages for at least one of 120 VAC, 208 VAC, 220 VAC and 240 VAC (col. 1, lines 11-21).

wherein said transformer is configured for supply voltages of at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC, said microcontroller is configured to recognize jumper selections for supply voltages for at least one of 380 VAC, 415 VAC, 440 VAC and 480 VAC (col. 1, lines 11-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. as modified by Schnackenberg et al. with the teachings of Kita et al. for the purpose of providing a motor operation controller which can accommodate different power supply voltages . . . (col. 7, lines 37-39).

Claims 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. as modified by Schnackenberg et al. as applied to claim 15 above, and further in view of Reason et al.

Kern et al. as modified by Schnackenberg et al. teach the claimed invention except for what is taught by Reason et al.

Reason et al. teach:

a generator control board configured to interface with said microcontroller and to sense at least one of oil pressure and temperature (col. 3, lines 54-col. 4, line 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. as modified by Schnackenberg et al. with the teachings of Reason et al. for the purpose of avoiding overpowering . . . the generator and the engine (i.e. just to maintain the generator and the engine unit running), and . . . to avoid shut down (and potentially, damage) (col. 1, lines 60-63).

With regard to the dry contact feature, it is well known that dry contacts are contacts which open and close but do not make or break the circuit, and such contacts are suitable for control purposes because they provide general purpose switching for turning devices on or off. Therefore, it would have been obvious to one of ordinary skill in the art to utilize a dry contacts outputs for the purpose of providing control, by signaling a device to turn on or off.

Claims 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kern et al. as modified by Schnackenberg et al. as applied to claim 15 above, and further in view of Bogel.

Kern et al. as modified by Schnackenberg et al. teach the claimed invention except for what is taught by Bogel.

Bogel teaches:

wherein said microcontroller is configured with at least one of a generator cool down timer, a generator warmup timer, a loss of power delay timer, a generator fail-to-start timer, a generator crank timer, a generator pause timer, a generator overload timer and an utility stabilization before switchback timer (col. 12, lines 16-30).

wherein said microcontroller is configured to recognize jumper selections for frequencies of 50 Hz and 60 Hz (col. 5, lines 39-41) for the purpose of ensuring that the frequency has reached a proper operating range (col. 6, lines 10-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kern et al. as modified by Schnackenberg et al. with the teachings of Bogel for the purposes of ensuring that when a failed source returns to normal, the voltage is stabilized before a retransfer will occur (col. 12, lines 18-20), ensuring that momentary dips in voltage will not cause a transfer operation (col. 12, lines 23-25), and ensuring that the frequency has reached a proper operating range (col. 6, lines 10-11).

Communications With The PTO

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon Polk whose telephone number is 703-308-6257. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703-308-3119. The fax phone numbers for

Art Unit: 2836

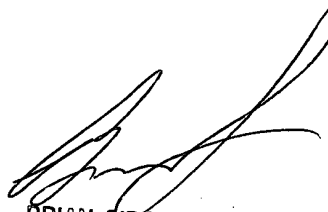
the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-305-7723 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

May 20, 2002

Sharon Polk

Patent Examiner – Art Unit 2836



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800